

SolarLite™ Pump

Installation & Operations Procedures Manual

Class 1 Division 2 Groups C and D



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Introduction

The benefits of solar powered chemical injection pumping systems offered by Texsteam Pumps will provide years of low maintenance, clean reliable service, zero noise pollution, without emissions to the surrounding environment. Our goal is to pass along a quality product, both a renewable resource and affordable investment to our customers.

To insure quality of product, functionality, operating procedures, warranty and service pertaining to equipment provided by Texsteam Pumps to our customers, consult a qualified manufacturing representative.

WARNING

This equipment may be installed in locations that subjects the units to the ingress of insects, rodents, etc. Make sure that the unit is properly closed after maintenance. Take the necessary precautions to protect yourself from these hazards before opening the unit.

Serialized Assemblies

It is strongly advised that all assemblies remain a complete or unbroken serialized set for proper functionality. These assemblies have been adequately sized based on the following variables: Daily Solutions Volume, Head Size, Well Pressures, Regional Solar Hours, Temperature, Number of Days without Sun Light, and Quantities of Batteries and Solar Panels.

WARNING

Minimum personal protection equipment (PPE) required for installation & maintenance of this unit: safety goggles, glove, steel toe shoes, hardhat, fire retardant suit.

WARNING

This equipment is designed to operate at temperatures between -40° F to 140° F. Prior to going on-site for installation or maintenance, make sure proper safety equipment is worn before handling the equipment and that you are properly dressed for the work site environment temperatures.

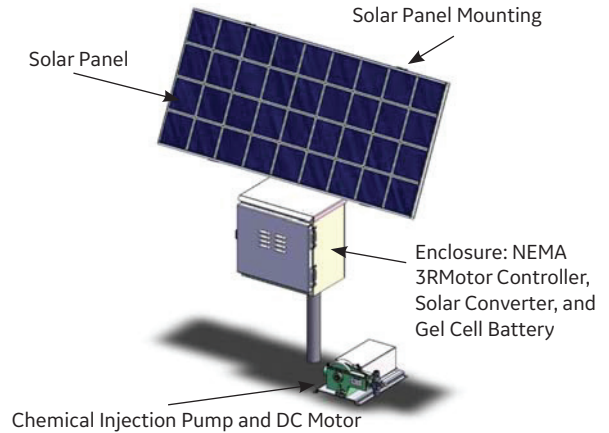


Figure 1 – SolarLite CID2 General Configuration

WARNING

Proper grounding is required for lightening protection. Refer to NEC Article 780 (NFPA) codes and other applicable state or local codes for lightning protection.

Note: Torque Specifications for all screws and terminal screws used in this assembly

#6-32 10 inch/lbs

#8-32 20 inch/lbs

Installation Instructions

The SolarLite pump assembly comes with connections which are provided to protect against accidental electrical shock. There are connectors inline provided for both the battery(s) and the solar panel(s). The connectors should not be connected while the SolarLite pump is being assembled or during any maintenance period.

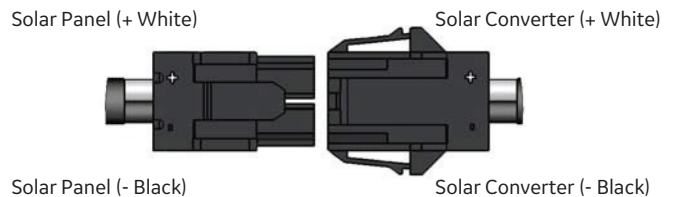


Figure 2– Solar Panel and Battery Connections

A 2.0-inch Diameter Schedule 40 galvanized coated 6 foot mounting pole has been provided for attaching both the Solar Panels and Battery Enclosure. The pole can be firmly attached to a leg of a solutions tank rack. An alternative method for securing the mounting pole would be to drive a T-post into the ground, slip the pole over the T-post and add a generous amount of Quick-Set concrete to the top opening of the pipe.

U-bolts have been included to secure the battery enclosure to the mounting pole. The distance from the ground to the underside of the enclosure should be approximately 36 inches.

This will allow the operator to sit comfortably on a stool while making input changes to the Motor Controller or to isolate the solar panel and battery power supplies for routine maintenance. Avoid over tightening of the U-bolt nuts to prevent damage to the battery enclosure. Solar panel bracket mounting bolts must be tightened to a torque of 72 inch-lbs.

For Safety purposes, the battery and solar panels should not be connected until all other assembly steps have been completed.

Solar Panel Mounting

WARNING

Ensure proper use of fall protection at heights, per safe site work practices and in accordance with local safety regulation and authorities. Ensure proper securement of personnel, tools and equipment to prevent falling or dropping from elevated locations.

WARNING

Burn hazard, solar panel surfaces may become hot when exposed to sunlight. Use proper protection equipment when handling or touching their surfaces.

WARNING

Solar panels and solar panel structure may become unstable or collapse during high wind conditions. Proper structure securement should be considered.

Mounting hardware to attach the solar panels to the pole has been pre-assembled to aid in field installation. Prior to placement of the 3-Outlet 2.0 inch diameter Pipe Tee, loosen the Azimuth (direction the solar panels face) Adjustment set screw. Reference Figure 3. Position the bottom inlet on top of the pole, making sure it is firmly centered and seated down. Make sure that there aren't any shadows that could contact any portion of the solar panel.

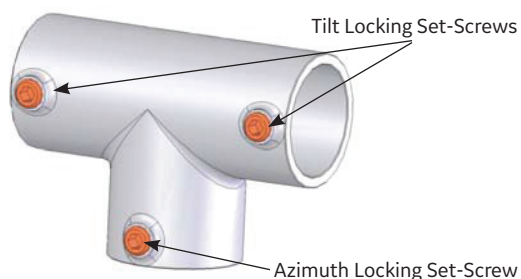


Figure 3

Solar Panel Alignment

During "sun hours" the solar panels are used to recharge the battery voltage used during the night or non-sun hours. The solar mounting assembly should be adjusted to achieve Maximum Effective Irradiance or Maximum Peak Power (maximum sun hours). Configuring the azimuth (direction the solar panels face) and horizontal (tilt) placement of the Solar Panels is critical and should be adjusted or aligned at midday to achieve maximum "sun hours".

To adjust both the direction the Solar Panels face and the tilt positions on the Solar Panel Mounting, there are (3) 5/8 in.- Set Screws on the 3-outlet 2.0 in. diameter Pipe Tee component of the mounting assembly, which will require a 5/16 Allen Wrench. Reference Figures 3 and 4.

STEP 1: Direction: Adjust the Solar Panel Array Azimuth (direction the solar panels face) by facing the assembly towards true South, not magnetic South. True South (Solar Noon) is defined as the position halfway between Sunrise and Sunset. Determine the halfway point between sunrise and sunset for a given day, and face the solar panels in that direction.

STEP 2: Tilt: Dresser recommends the tilt angle be set for winter or the winter solstice (December 21). Use one of the following methods to set the tilt of the solar panels.

Method 1: Reference Figure 6 to obtain the desired Tilt angle with respect to the latitude of the end customer's well location on the right side of the graph. Follow the curve across the graph to the left side to "Photovoltaic Module Angle (Deg.)" with reference to the horizontal plane. Use a cheap protractor and a foot-long piece of string with a small weight attached to the end to set the tilt of the solar panels.

Method 2: First, determine the latitude of the install location. Then subtract the Sun Declination Angle (-23.5°) from the latitude. This method for finding this angle can be seen in the following example provided. Reference Figure 4.

Tilt Angle = Latitude Angle - (Declination Angle).

Example: Site: Houston TX, Latitude = 29°8'

Latitude (29.8°) - Declination Angle (-23.5°) = 53.3°

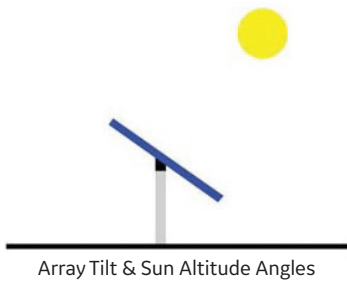


Figure 4

After adjusting the Azimuth and Tilt angle, tighten down the set screws that secure the 3-outlet Pipe Tee fitting to the 2.0 in. mounting pole.



Figure 5

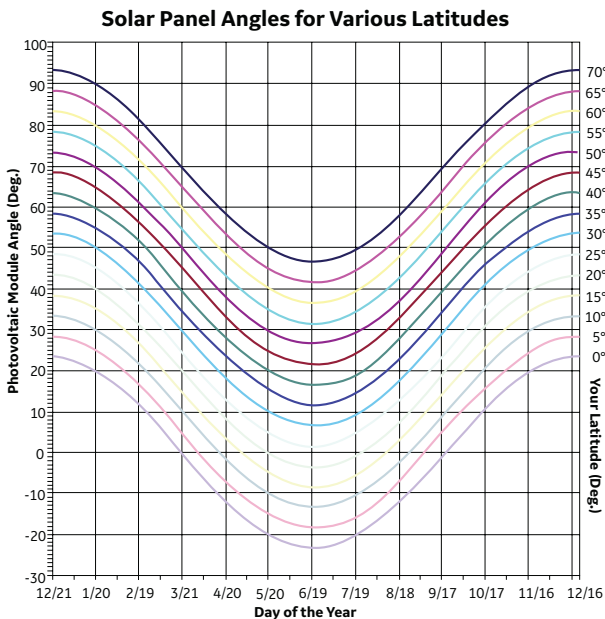


Figure 6 – Solar Panel Tilt vs. Well Latitude Location

Solar Panel Maintenance

Very little maintenance is necessary other than the periodic cleaning of the Solar Panel screen. This will optimize the charging capabilities, by enhancing the light transmission. Use a mild soap solution, warm water and a clean soft towel to remove dust, bird dropping, etc. Use of any greasy substances or sharp tools might scratch the protective covering.

Handle the solar panels with care. The cells can easily be damaged due the fragile nature of the multi-crystalline silicon cell structure. Irreparable damage can be caused by any impacting, twisting, or bending action of the panel assemblies. Do not drill or weld the frame if possible.

Solar Panel Wiring

WARNING
Electric shock hazard.

Panels Provided with Unit: Using a piece of cardboard, keep the Solar Panels covered while making any electrical connection to the Solar Panel Junction box. Follow the instructions and wiring diagram (Reference Figure 16) for proper polarity connectivity. Always use insulated tools to avoid high voltage and current produced by the solar panels. Install the cable glands as needed into the side of the Solar Panel Junction box. Position a screw driver on the diameter of the circular plastic plug to remove the knockout. Install the cable gland, avoiding over tightening. Slide power cable through the cable gland and hook up white wire to positive contact and the black wire to negative contact. Where multiple panels are used, unless only one solar panel cable is protruding from the battery enclosure, all Solar Panels are to be wired to a unique solar panel cable assembly. In some instances, two panels will be wired in parallel (connecting Positive to Positive and Negative to Negative). Close the junction box and secure the lid using the captive screws provided.

A simple plug/socket assembly has been provided to isolate or to disconnect the power from the Solar Panel to the electrical charging system for safety and general maintenance. **Do not plug in until all other connections have been completed. After all connections have been made, remove the cardboard cover.**

Panels Provided by Customer: Using a piece of cardboard, keep the Solar Panels covered while making any electrical connection to the Solar Panel Junction box. Follow the instructions and wiring diagram (reference Figures 20) for proper polarity connectivity. Always use insulated tools to avoid

high voltage and current produced by the solar panels. Route the solar panel wiring through the enclosure opening (Figure 7). Install and tighten the cable gland connector into the side of the enclosure. Each solar panel wiring assembly should be routed through a unique opening.

In some instances, two panels will be wired in parallel (connecting Positive to Positive and Negative to Negative).

A simple plug/socket assembly has been provided to isolate or to disconnect the power from the Solar Panel to the electrical charging system for safety and general maintenance.

Do not plug in until all other connections have been completed. After all connections have been made, remove the cardboard cover.

For Safety purposes, the battery and solar panels should not be connected until all other assembly steps have been completed.

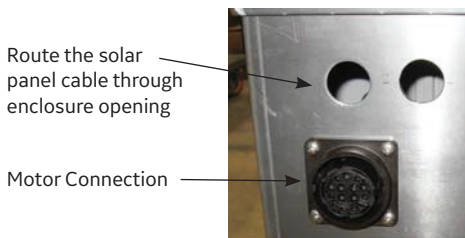


Figure 7

Motor Controller Enclosure

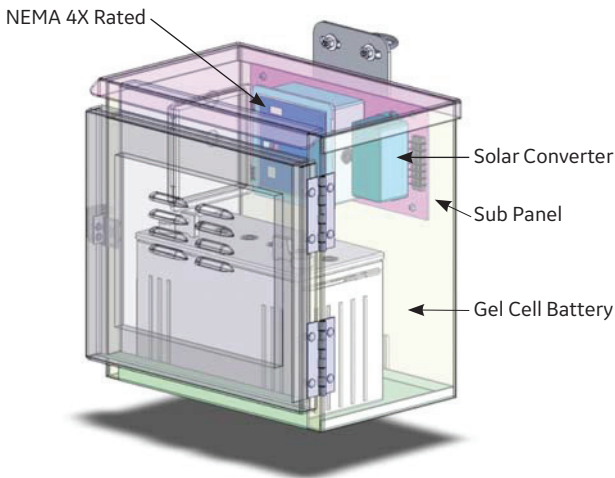


Figure 8 – Enclosure: Battery, Motor Controller, and Solar Converter

Battery Enclosure

WARNING

Burn hazard. The enclosure may become hot when exposed to sunlight. Use PPE when touching or handling enclosure.

WARNING

Heavy weight lift hazard. Enclosures must be lifted by two or more people. Otherwise it must be moved by use of a mechanical lift.

The Battery Enclosure is constructed from a marine grade all aluminum exterior shell, neoprene door seal, security latch, and front ventilation. The enclosures are available in 1-5 battery types that are rated and meet NEMA 3R-rating. For 1 and 2 Battery Enclosures use the two U-bolts provided, to mount the empty battery enclosure firmly to the secured 6-foot pole, approximately three feet from the ground to the underside of the enclosure. Over tightening of the U-bolts should be avoided. The 4-battery unit is enclosed in a top hinge type chest which will lay on the ground. The Motor Controller, Solar Converter and Terminal Strip come pre-assembled on the Sub Panel from Texsteam Pumps. This Sub Panel is located on the upper back wall of the Battery Enclosure. It has been secured and is offset from the back mounting surface of the enclosure using four #10-32UNC Studs.

Motor and Pump Installation

WARNING

Burn hazard.
The motor may become hot during operation, use PPE.

WARNING

Motor has a thermal overload switch. Take precautions when servicing unit. Always turn motor (unit) off before any service or maintenance is performed.

Connect the DC motor cable end (circular connector) to the mating connector (panel mount) on the battery enclosure. Reference Figure 7. A standard 6-foot motor wire harness comes pre-assembled using a 14+ P CID2 all weather connecting receptacle. This connection can easily be connected and disconnected for ease of installation or relocation. Reference Figure 9.



Figure 9

Battery Wiring Installation

WARNING

Electric shock hazard.
Use PPE as outlined in OSHA guidelines.

WARNING

Lift hazard, each battery weights more than 60 lbs.
Use mechanical lift or more than one person for lifting battery.

Note: Battery terminals are provided with a boot cover. Do not remove this cover during operation. Always install the cover when replacing batteries.

Once the enclosure has been mounted onto the pole or placed on the ground, the battery(s) can then be inserted into the battery enclosure. Reference Figures 10-12 and schematics for wiring and installation steps.

On multiple battery installations, a ground wire has been provided to be connected from battery negative to battery negative. The black wire should be connected from a negative battery post to the negative connection on the terminal block on the enclosure backplate.

Supply Power to SolarLite Pump

WARNING

Electric shock hazard. Use appropriate PPE when handling.

Connect color coded cable(s) from battery to same cable with color coded connector within enclosure that terminates to terminal block.

Connect color coded cable(s) from solar panel to same color-coded connector within enclosure that terminates to terminal block.

The system should now be operational. The LED display on the controller should be illuminated.



Figure 10 – Single Battery

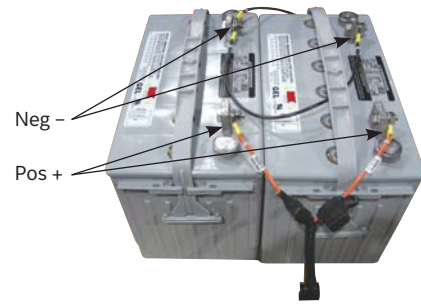


Figure 11 – Double Battery



Figure 12 – Triple Battery Positive Cable End

Set Pump Starting Parameters

Review Table 1 for desired volume per head size and set the RPM dial on the motor control bracket to the appropriate speed as indicated on the table.

Note: The volume of chemical should always be verified utilizing a drum gauge or other appropriate method

Dial	RPM	3/16" Head			1/4" Head			3/8" Head			1/2" Head		
		Qts/Day	Gal/Day	Max psi	Qts/Day	Gal/Day	Max psi	Qts/Day	Gal/Day	Max psi	Qts/Day	Gal/Day	Max psi
2.0	5	2.92	0.73	5000	5.12	1.28	5000	11.52	2.88	2000	20.48	5.12	750
2.2	6	3.50	0.88	5000	6.14	1.54	5000	13.82	3.46	2000	24.58	6.14	750
2.4	7	4.09	1.02	5000	7.17	1.79	5000	16.13	4.03	2000	28.67	7.17	750
2.6	8	4.67	1.17	5000	8.19	2.05	5000	18.43	4.61	2000	32.77	8.19	750
2.8	9	5.26	1.31	5000	9.22	2.30	5000	20.74	5.18	2000	36.86	9.22	750
3.0	10	5.84	1.46	5000	10.24	2.56	5000	23.04	5.76	2000	40.96	10.24	750
3.2	11	6.42	1.61	5000	11.26	2.82	5000	25.24	6.34	2000	45.06	11.26	750
3.4	12	7.01	1.75	5000	12.29	3.07	5000	27.65	6.91	2000	49.15	12.29	750
3.6	13	7.59	1.90	5000	13.31	3.33	5000	29.95	7.49	2000	53.25	13.31	750
3.8	14	8.18	2.04	5000	14.34	3.58	5000	32.36	8.06	2000	57.34	14.34	750
4.0	15	8.76	2.19	5000	15.36	3.84	5000	34.56	8.64	2000	61.44	15.36	750
4.2	16	9.34	2.34	5000	16.38	4.10	5000	36.86	9.22	2000	65.54	16.38	750
4.4	17	9.93	2.48	5000	17.41	4.35	5000	39.17	9.79	2000	69.63	17.41	750
4.6	18	10.51	2.63	5000	18.43	4.61	5000	41.47	10.37	2000	73.73	18.43	750
4.8	19	11.10	2.77	5000	19.46	4.86	5000	43.78	10.94	2000	77.82	19.46	750
5.0	20	11.68	2.92	5000	20.48	5.12	5000	46.08	11.52	2000	81.92	20.48	750
5.2	21	12.26	3.07	5000	21.50	5.38	5000	48.38	12.10	2000	86.02	21.50	750
5.4	22	12.85	3.21	5000	22.53	5.63	5000	50.69	12.67	2000	90.11	22.53	750
5.6	23	13.43	3.36	5000	23.55	5.89	5000	52.99	13.25	2000	94.21	23.55	750
5.8	24	14.02	3.50	5000	24.58	6.14	5000	55.30	13.82	2000	98.30	24.58	750
6.0	25	14.60	3.65	5000	25.60	6.40	5000	57.60	14.40	2000	102.40	25.60	750
6.2	26	15.18	3.80	5000	26.62	6.66	5000	59.90	14.98	2000	106.50	26.62	750
6.4	27	15.77	3.94	5000	27.65	6.91	5000	62.21	15.55	2000	110.59	27.65	750
6.6	28	16.35	4.09	5000	28.67	7.17	5000	64.51	16.13	2000	114.69	28.67	750
6.8	29	16.94	4.23	5000	29.70	7.42	5000	66.82	16.70	2000	118.78	29.70	750
7.0	30	17.52	4.38	5000	30.72	7.68	5000	69.12	17.28	2000	122.88	30.72	750
7.2	31	18.10	4.53	5000	31.74	7.94	5000	71.42	17.86	2000	126.88	31.74	750
7.4	32	18.69	4.67	5000	32.77	8.19	5000	73.73	18.43	2000	131.07	32.77	750
7.6	33	19.27	4.82	5000	33.79	8.45	5000	76.03	19.01	2000	135.17	33.79	750
7.8	34	19.86	4.96	5000	34.82	8.70	5000	78.34	19.58	2000	139.26	34.82	750
8.0	35	20.44	5.11	5000	35.84	8.96	5000	80.64	20.16	2000	143.36	35.84	750
8.2	36	21.02	5.26	5000	36.86	9.22	5000	82.94	20.74	2000	147.46	36.86	750
8.4	37	21.61	5.40	5000	37.89	9.47	5000	85.25	21.31	2000	151.55	37.89	750
8.6	38	22.19	5.55	5000	38.91	9.73	5000	87.55	21.89	2000	155.65	38.91	750
8.8	39	22.78	5.69	5000	39.84	9.98	5000	89.86	22.46	2000	159.74	39.93	750
9.0	40	23.36	5.84	5000	40.96	10.24	5000	92.16	23.04	2000	163.84	40.96	750
9.2	41	23.94	5.99	5000	41.98	10.50	5000	94.46	23.62	2000	167.94	41.98	750
9.4	42	24.53	6.13	5000	43.01	10.75	5000	96.77	24.19	2000	172.03	43.01	750
9.6	43	25.11	6.28	5000	44.03	11.01	5000	99.07	24.77	2000	172.03	43.01	750
9.8	44	25.70	6.42	5000	45.06	11.26	5000	101.38	25.34	2000	180.22	45.06	750
10.0	45	26.28	6.57	5000	46.08	11.52	5000	103.68	25.92	2000	184.32	46.08	750

TABLE 1: PUMP STARTING PARAMETERS

NOTE: The volume for the duplex and triplex heads will be 2X and 3X the volume of the single head pump respectively.

Head Size	# of heads	RPM Range		Volume Range		Units of Measure	Pressure range (psi)
		Low	High	Low	High		
3/16"	Single	5	45	2.92 (2.76)	26.31 (24.89)	Quarts (Liters)/Day	0-5000
	Duplex	5	45	5.84 (5.52)	52.62 (49.79)	Quarts (Liters)/Day	0-5000
	Triplex	5	45	8.76 (8.28)	78.93 (74.67)	Quarts (Liters)/Day	0-5000
1/4"	Single	5	45	5.12 (4.84)	46.07 (43.61)	Quarts (Liters)/Day	0-5000
	Duplex	5	45	10.24 (9.68)	92.14 (87.22)	Quarts (Liters)/Day	0-5000
	Triplex	5	45	15.36 (14.52)	138.21 (130.83)	Quarts (Liters)/Day	0-3500
3/8"	Single	5	45	11.52 (10.9)	103.68 (98.12)	Quarts (Liters)/Day	0-2000
	Duplex	5	45	23.04 (21.8)	207.36 (196.24)	Quarts (Liters)/Day	0-1000
	Triplex	5	45	34.56 (32.7)	311.04 (294.36)	Quarts (Liters)/Day	0-750
1/2"	Single	5	45	20.48 (19.38)	184.29 (174.43)	Quarts (Liters)/Day	0-750
	Duplex	5	45	40.96 (38.76)	368.58 (348.86)	Quarts (Liters)/Day	0-400
	Triplex	5	45	61.44 (58.14)	552.87 (523.29)	Quarts (Liters)/Day	0-300

TABLE 2: HEAD SIZE VS. VOLUME RANGE

Motor Controller

The Motor Controller has been designed to provide continuous motor operation. Features include:

- A variable speed motor that will match pump output requirements.
- Two LEDs (Light Emitting Diode) located on front panel mount display that represent:
 - Power On (Power has been supplied to the controller)
 - Fault condition (Motor fault condition)
- Manual field input capabilities using RPM adjustment knob. Reference Figure 14.
- Motor Run/Stop Switch

Note: Unit enclosure can be locked with a padlock. Enclosure should be kept locked in order to avoid unauthorized access or vandalism.

Motor Controller Enclosure

A hand guard has been provided to added a degree of protection to personnel from accidental exposure to electrical components and also provide a degree of protection to the electronics from the environment. Avoid static discharge into the circuitry when servicing or connecting electrical connections.

Solar Converters

These charge controllers use the latest in technology to further boost the performance current produced by the solar panels with the aid of microprocessor solar power management tool. The result is a highly efficient solar power converter. When solar energy is being produced using solar panels, a microprocessor measures and determines the optimum operating charging point to charge the battery.

A low voltage disconnect is included in the design to protect the battery from excessive discharge. Two LED's provide a visual indication as to the status of the controller.

A temperature sensor is also provided to monitor battery temperature; this sensor provides feedback to the solar converter and will adjust battery charge conditions accordingly as the temperature changes.



Motor Controller

Figure 13

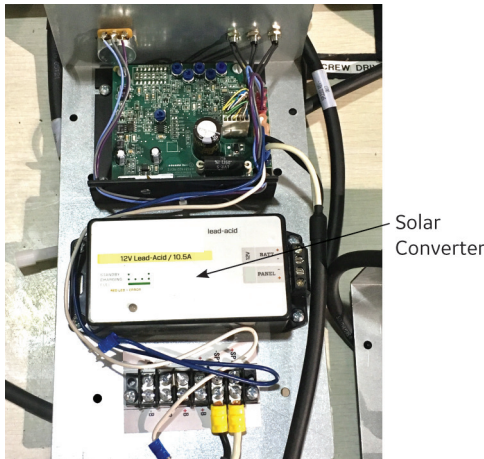


Figure 14

Status Indication

The GV-10 has a MULTICOLOR LED

Led Run/Charge Indication

Standby: The battery is connected properly and ready to charge when solar panel power is available.
2 SEC. BETWEEN GREEN BLINKS



Charging (low current, less than ~3.7A):
FAST & SHORT GREEN BLINKS



Charging (high current, more than ~3.7A):
LONGER, SLOWER GREEN BLINKS



Charging (current limit): charging at current limit (10.5A+).
LONG, THEN SHORT GREEN BLINKS



Battery charged: The battery is in the absorption or float charging stage.
SOLID GREEN LED



Led Error Indication

Overheat: The controller's internal temperature is too high.
SETS OF 2 RED BLINKS.



Overload: This could be caused by changing the solar panel connections while the controller is operating.
SETS OF 3 RED BLINKS.



Battery voltage too low: The controller cannot begin charging due to low battery voltage. If the nominal battery voltage is correct (12V), charge the battery by some other means before use.

SETS OF 4 RED BLINKS



Battery voltage too high: If the nominal battery voltage is correct (12V), check the functioning of other chargers that may be connected to the system.

SETS OF 5 RED BLINKS.



Panel voltage too high: Only 12V nominal solar panels may be used with this controller.

SETS OF 6 RED BLINKS.



Internal error: Contact your dealer for assistance.

2 LONG BLINKS, FOLLOWED BY ANY NUMBER OF SHORT BLINKS.



Troubleshooting

If the LED Indicator will not light, or displays an indication not listed in this manual:

- Verify correct battery polarity;
- Check that there is a solid electrical connection to the battery;
- Check that battery voltage appears on the GV-10 battery terminal screws;
- Check the GV-10 terminal area for evidence of water or mechanical damage.

The GV-10 will not operate without a battery. If the system appears to be overcharging or the GV-10 will not begin charging, ensure that the solar panel is wired only to the GV-10. If the GV-10 does not appear to be charging, note that the GV-10 waits up to one minute before trying to restart if it has shut down due to lack of power from the solar panel. If the LED indicator will not light with a battery connected, or blinks the over-battery-voltage error, or the controller does not charge, the internal fuse may be blown. Check the fuse inside the GV-10 by removing the four screws on the bottom of the enclosure.

Note: The most common causes of blown fuses are:

- Connecting the GV-10 to the battery backwards;
- Shorting the solar panel input while the GV-10 is charging;
- Disconnecting the vehicle's battery while an alternator is running;
- Connecting the GV-10 battery terminals to a 24V battery.

In the latter three cases, there may be other internal damage to the controller.

The source of above content is the manufacturer's website for solar converter - Genasun, for model GV-10 converter. The content has been included for convenience and information purposes only.

Gel Cell Battery

WARNING

When using batteries other than those provided or recommended by Texsteam Pumps there is a potential for hydrogen leaks and an explosion hazard.

WARNING

Texsteam Pumps battery part number SP2020 is recommended to be used with the system. Any other battery type has not been tested and/or approved to be used with the Texsteam Pumps solar system.

All batteries conform to BCI specifications. Batteries are maintenance free. Sealed construction eliminates: periodic watering, corrosive spills and fumes. Electrolyte will not stratify, no equalization charging required. Allows for Plunger faster recharging intervals. Battery operating temperatures range from -76°F (-60°C) to 140°F (60°C). All batteries in multi-battery configurations are to be wired in parallel Locking Nut (connecting Positive to Positive and Negative to Negative). All batteries cables are equipped with a current limiting device to protect against an over current condition.

Simple/Duplex/Triplex Pump

All pump heads have a standard 316 stainless steel body and incorporate the Texsteam pump proven plunger and packing design technology. Pump outputs are a basic setup input feature. The daily volume input requirement and the head size are all that is needed, simply "Set It and Forget It". Output volumes remain constant as pressure requirements change. Min/Max daily volumes based on continuous duty range from 2.92 to 368 quarts/day (1.66 to 348 Liters). Output pressures ranges up to maximum of 5000 PSI.

Electric Motor

WARNING

Burn hazard.

DC electric motors have gone through rigorous testing prior to distribution to market. The motors are designed for: high efficiency, low power consumption, long life, continuous duty cycle and maintenance free.

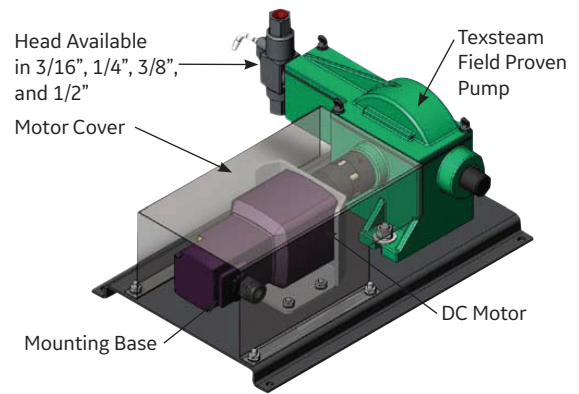


Figure 15 – Pump and Electric DC Motor Assembly

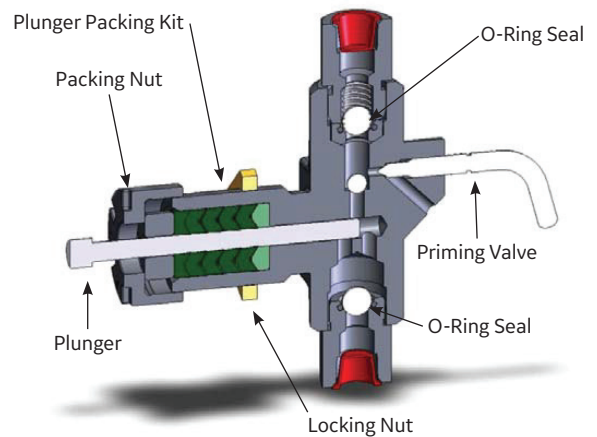


Figure 16 – Chemical Injection Pump Head

Elimination of Pump Drag and Friction Packing Tightness

Particular attention should be given to Packing Nut tightness. Over tightening of Packing Nut can result in excessive losses of electrical power, which effects battery life and premature seal packing degrading. The method for tightening all Texsteam pumps is the same. NEVER ADJUST PACKING WITH THE PUMP RUNNING. Loosen the Packing Nut until you can feel that it is free, then retighten until you feel a snug fit. Perform one more tightening, the size of one (only) notch in the Packing Nut. If this does not work, stop the pump and tighten only one more notch.



Figure 17 – Front Panel Control and Indicator

Head Adjustment

Between 3 and 4 screw threads should be present once the locking nut to secure the head to the pump base has been tightened. Reference Figure 18.

3 to 4 threads should be visible

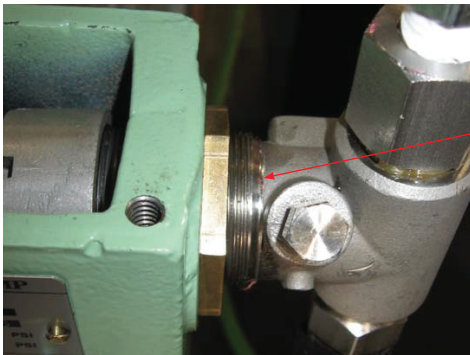


Figure 18

An adjustment should be performed to minimize friction between the coupling and pump housing. Reference Figure 19.

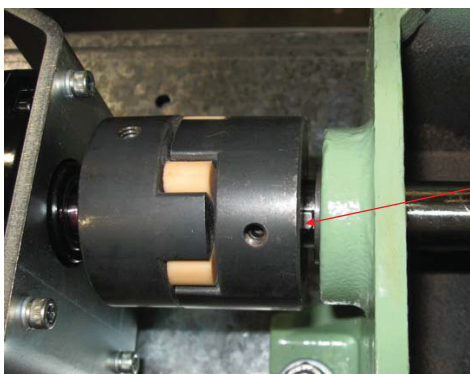


Figure 19

WARNING

Pinch Hazard

Wiring Diagrams

Wiring diagrams provided with units when shipped. Consult Texsteam Pumps if an additional or specific wiring diagram is needed.

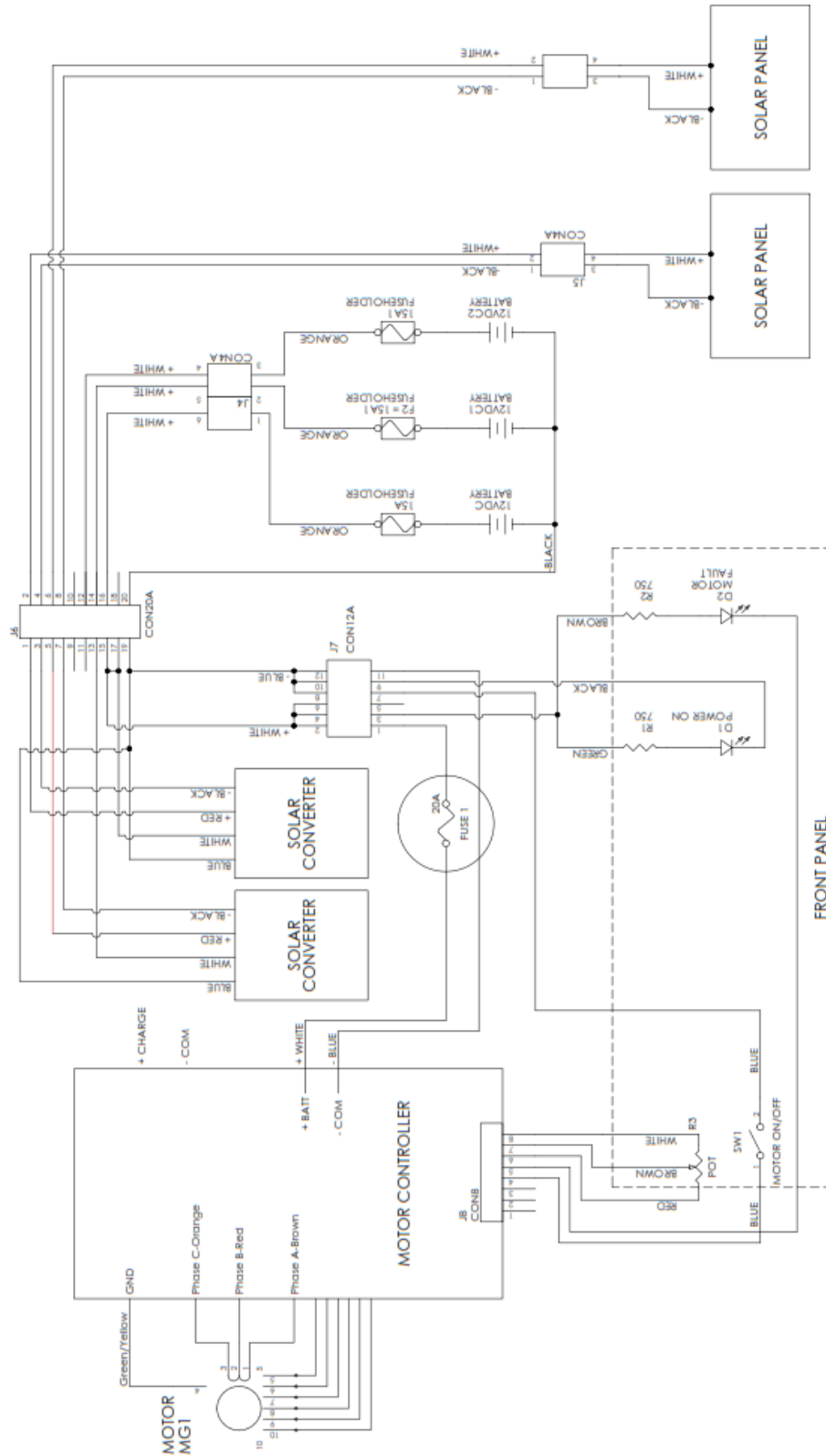


Figure 20: Wiring Diagram

WARNING

- EXPLOSION HAZARD -
SUBSTITUTION OF COMPONENTS MAY IMPAIR
SUITABILITY FOR CLASS 1, DIVISION 2.

ADVERTISSEMENT

- RISQUE D'EXPLOSION -
LA SUBSTITUTION DE COMPOSANTS PEUT RENDRE
CE MATERIEL INACCEPTABLE POUR LES EMPLACEMENTS
DE CLASSE 1, DIVISION 2.

WARNING

- EXPLOSION HAZARD -
DO NOT REPLACE ANY COMPONENT UNLESS POWER
HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN
TO BE NON-HAZARDOUS.

ADVERTISSEMENT

- RISQUE D'EXPLOSION -
COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT
EST DESIGNÉ NON DANGEREUX AVANT DE REPLACER LE
COMPOSANTS.

WARNING

- EXPLOSION HAZARD -
DO NOT DISCONNECT EQUIPMENT UNLESS POWER
HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN
TO BE NON-HAZARDOUS.

ADVERTISSEMENT

- RISQUE D'EXPLOSION -
AVANT DE DECONNECTER L'EQUIPEMENT, COUPER
LE COURANT OU S'ASSURER QUE L'EMPLACEMENT
EST DESIGNÉ NON DANGEREUX.

WARNING

Beware of potentially harmful chemicals ejecting from the pump head when you are opening the priming valve. Take appropriate precautions to protect your self from high temperature and/or harmful chemical exposure.

WARNING

This equipment can be installed in areas that may contain gases or vapors which can lead to oxygen depletion and/or personnel asphyxiation. Additional protection and warnings should be followed and posted in such installations.

Note: Material Safety Data Sheets (MSDS) for all injection and process media shall be available and reviewed in accordance to local requirements.

Servicing

Emergency field repairs by authorized service technicians are strongly advisable. Repairs made by unauthorized technicians will void any warranty. To assure safety of equipment and personnel, only Texsteam Pumps recommended replacement parts shall be installed. And above all, disconnect power from the SolarLite pump before servicing.

Damage to wiring and operating equipment may be avoided with careful reviewing the operating and installation procedures document by qualified personnel. At all times, operating safety of electrical equipment is imperative to avoid injury to personnel.

IMPORTANT

Read this instruction document with special attention to warnings, cautions and safety concerns.

**FAILURE TO ADHERE TO THESE INSTRUCTIONS
COULD RESULT IN SAFETY HAZARDS WHICH MAY
RESULT INJURY TO PERSONNEL, MOTOR/CONTROLLER
DAMAGE OR OTHER ELECTRICAL EQUIPMENT.**

Doubts or reservations with regards to installations or maintenance with reference to connecting your "Solar Powered" Chemical Injection Pump system should refer to the detailed sections supplied in this manual. For additional instruction, classification or assistance, contact an authorized Service Center.

WARNING

Avoid personnel injury involving equipment that is in motion. Always remove or disconnect power prior to service to the motor, motor controller, batteries, charge controller, solar panels.

Surface temperature of this equipment can reach temperatures as high as 230°C. Please make sure that chemical and process media LEL (Lower Explosion Limit) are below this limit.

If you purchase a system without batteries and/or solar panels, you are responsible for obtaining certification on these components.

Today, over-injecting and incurring wasted chemical costs are the norm. They shouldn't be.

Cheap and imprecise chemical injection pumps, operating in ever-changing conditions, leads to unpredictable injection rates. Now, chemicals represent one of the highest operating expenses in a well site. As a result, the average 20% rate of over-injection is costing operators thousands of dollars a year, for each injection point!

STOP over-injecting.

STOP wasting costly chemicals.

START delivering controlled intelligence, today.





TEXSTEAM™ Green.

***A sign of Quality, Durability, and
Peace of Mind for over 80 years.***



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